

Module specification

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Module Code	ENG7B6
Module Title	Dissertation
Level	Level 7
Credit value	60
Faculty	FACE
HECoS Code	100184
Cost Code	GAME
Pre-requisite module	N/A

Programmes in which module to be offered

Programme title	Core/Optional/Standalone
MSc Engineering (Advanced Manufacturing)	Core
MSc Engineering (Sustainable Energy)	Core
MSc Engineering (Electrical)	Core

Breakdown of module hours

Learning and teaching hours	6 hrs
Placement tutor support hours	0 hrs
Supervised learning hours e.g. practical classes, workshops	0 hrs
Project supervision hours	12 hrs
Active learning and teaching hours total	18 hrs
Placement hours	0 hrs
Guided independent study hours	582 hrs
Module duration (Total hours)	600 hrs

Module aims

This module focuses on advanced applied investigation supported by selective theoretical input. Learners undertake complex technical or research tasks requiring innovation, precision, and critical reflection. The experiential emphasis enhances capability in designing and evaluating sophisticated systems, contributing to professional and research excellence.

This module aims to enable students to pursue an in-depth, independent exploration into an area of personal and professional interest within their programme of study, developing

advanced research, critical evaluation, innovation, and communication skills through the planning, conducting research and submission of a substantial engineering dissertation under academic supervision.

Module Learning Outcomes

At the end of this module, students will be able to:

1	Critically evaluate current research literature, technological advances and other professional sources to define, justify and contextualise a complex engineering problem within their chosen area of study.
2	Design and develop an original or innovative solution to a complex engineering problem while applying deep knowledge and research principles to theoretical and practical problems in the dissertation (AHEP-4 M5).
3	Plan, manage and execute an independent research project using appropriate methodologies, analytical tools and engineering judgement, demonstrating professionalism and the ability to work with uncertainty and risk (AHEP-4 M5).
4	Systematically investigate the role of health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards within the project (AHEP-4 M5).
5	Communicate effectively your research outputs to both technical and non-technical audiences and evaluate the effectiveness of methods used (AHEP-4 M17).

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment 1:

Option A: Prepare a formal dissertation based upon an in-depth literature review and the findings of their research project

Option B: Complete a journal article based solely upon work undertaken in their research project. The style and formatting of the article are to be agreed with the module leader and must conform to a named and appropriate national / international refereed journal. The structure of the dissertation will be provided within the assignment brief (AHEP-4).

Assessment 2:

All students will complete a short presentation (20 min) and oral examination based upon defence of their dissertation. It is expected that this is conducted face-to-face but could be arranged via an online conference (such as MS Teams or Zoom) where appropriate. The structure of the presentation will be provided within the assignment brief (AHEP-4).

Assessment number	Learning Outcomes to be met	Type of assessment	Duration / Word Count	Weighting (%)	Alternative assessment, if applicable
1	1-3	Dissertation/Project	15000	80	N/A
2	4-5	Presentation	20 min	20	N/A

Derogations

Credits shall be awarded by an Assessment Board for those modules in which a mark of at least 50% has been achieved, with a minimum mark of 40% in each element of assessment.

Learning and Teaching Strategies

Teaching is predominantly research-active and laboratory-based, emphasising experimentation, analysis, and technical precision. Learners apply theory critically to design and evaluate complex systems or investigations. Online collaboration and digital resources extend research capability, while tutorials and supervision provide targeted feedback to support scholarly and professional excellence.

Welsh Elements

This module will be delivered through the medium of English; however, students have the option to submit their assessments in the medium of Welsh. While this module is not currently offered fully through Welsh, Welsh language support and guidance are available, and some learning materials or tutorial discussions may incorporate Welsh elements where appropriate. To further promote bilingual learning, all students have the opportunity to take the 20-credit Welsh for STEM short course, designed to develop confidence and subject-specific language skills in both English and Welsh.

Indicative Syllabus Outline

- Introduction and planning your Dissertation - identification and justification of a complex engineering problem aligned with the programme of study, defining research questions, choosing a suitable topic and a supervisor. This may be a current research topic of a member of staff, a topic suggested by industry or a topic of particular interest to a student or their employer or sponsor.
- Literature review and critical reading - selection and evaluation of current literature review, standards and other professional sources.
- Research methodology and project planning - selection and justification of appropriate research methodologies, experimental design, materials and equipment, modelling or simulation approaches, including risk assessment and project management.
- Data collection and reporting - application of advanced analytical techniques, engineering judgement and critical reflection to collect and evaluate the results.

- The peer review process - regular meetings will be held between students and supervisors to discuss the development and progress of the research dissertation.
- Dissertation writing - preparation of a coherent, well-structured dissertation that communicates effectively your research outputs to both technical and non-technical audiences both orally and in writing.
- Mastering the Viva Voce.

Indicative Bibliography

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads:

Please refer to the information provided on Moodle as this will signpost you to the most appropriate sources of information and guidance for the project module

Other indicative reading:

N. J. Salkind, *Exploring Research*, 10th ed. Harlow, UK: Pearson, 2022

H. Silyn-Roberts, *Writing for Science and Engineering: Papers, Presentations, and Reports*, 2nd ed. Amsterdam, The Netherlands: Elsevier, 2013.

N. J. Salkind, *Exploring Research*, 10th ed. Harlow, UK: Pearson, 2022

Administrative Information

For office use only	
Initial approval date	June 2026
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